

GENERAL NOTES

1. Shop Drawings: This Index is considered fully detailed, only submit shop drawings for minor modifications not detailed in the Plans.
2. Prior to Fabrication: Verify the installed foundation elevation will result in the required signal elevation and adjust the Pole height as needed.
3. Details for Signal and Sign locations, Signal Head attachment, Sign attachment, Pedestrian Head attachment, and Foundation Conduit are not shown for simplicity.
4. Materials:

Split-lock washers and self-locking nuts are not permitted

A. Poles, Mast Arms and Backing Rings:

a. Less than 3⁄16": ASTM A1011 Grade 50, 55, 60 or 65

b. Greater than or equal to 3⁄16": ASTM A572 Grade 50, 55, 60 or 65

c. ASTM A595 Grade A (55 ksi yield) or Grade B (60 ksi yield)

B. Steel Plates: ASTM A36

C. Weld Metal: E70XX

D. Bolts, Nuts and Washers:

a. High Strength Bolts: ASTM F3125, Grade A325, Type 1

b. Nuts: ASTM A563 DH Heavy-Hex

c. Washers: ASTM F436 Type 1, one under turned element

E. Anchor Bolts, Nuts and Washers:

a. Anchor Bolts: ASTM F1554 Grade 55

b. Nuts: ASTM A563 Grade A Heavy-Hex (5 per anchor bolt)

c. Plate Washers: ASTM A36 (2 per bolt)

F. Threaded Bars/Studs: ASTM A36 or ASTM A307

G. Handhole Frame: ASTM A709 or ASTM A36, Grade 36

H. Handhole Cover: ASTM A1011 Grade 50, 55, 60 or 65

I. Aluminum Pole Caps and Nut Covers: ASTM B26 (319-F)

J. Stainless Steel Screws: AISI Type 316

K. Concrete: Class IV (Drilled Shaft) for all environmental classifications.

L. Reinforcing Steel: Specification Section 415

5. Fabrication:

A. Pole and Mast Arm Taper: Change diameter at a rate of 0.14 inches per foot.

B. Upright splices are not allowed. Transverse welds are only permitted at the base.

C. First and Second arm camber angle = 2°

D. Provide bolt diameters as follows:

a. Bolts (except Anchor Bolts): Bolt diameter plus 1⁄16", prior to galvanizing.

b. Anchor Bolts: Bolt diameter plus 1⁄2" (Max.)

E. Face handhole perpendicular from arm on single arm poles, perpendicular from first arm of double arm poles facing away from traffic or see special instructions on the Mast Arm Tabulation Sheet.

F. Seam weld on bottom side of arm. Seam weld under Arm 1 side of pole.

G. Provide a 'J' or 'C' hook at the top of the pole for signal wiring support (See Sheet 6).

H. Perform all welding in accordance with Specification Section 460-6.4.

I. Hot Dip Galvanize after fabrication.

6. Coatings:

A. All Nuts, Bolts, Washers and Threaded Bars/Studs: ASTM F2329

B. All other steel items ASTM A123

7. Construction:

A. Foundation: Specification Section 455 Drilled Shaft, except that payment is included in the cost of the Mast Arm.

B. Install Pole vertically.

C. Place structural grout pad with drain between top of foundation and bottom of baseplate in accordance with Specification Section 649-7.

D. Attach Sign Panels and Signals centered on the elevation of the Mast Arm.

E. Wire Access holes are 1 1⁄2" or less in diameter.

The diagram illustrates a Mast Arm Assembly with various components and dimensions. Key elements include:

 - Dimensions:** 'FA' + 'FE' - Splice, 'SA' + 'SE' - Splice, 'FE', 'SE', 'FA', 'SA', 'F0', 'S0', 'UB' (See Plans) (See Note #2), 'UA' (See Index 649-030), 3'-0" Min., 0.14 in/ft Taper (Typ.), 0.14 in/ft Taper (Typ.), 2'-6", 0" With Sidewalk 6" Otherwise, 1~2" Conduit Per Assembly 1~1" Additional Conduit In Quadrant With Controller.
 - Components:** Mast Arm, Mast Arm Splice (Single Arm See Sheet 3) (Double Arm See Sheet 4), Pole Connection (Single Arm See Sheet 3) (Double Arm See Sheet 4), Street Name, Free-Swinging, Internally Illuminated Street Sign (See Index 700-050), Provide 1/2" Ø Weep Hole Located At Bottom Of Arm. 1'-0" From Arm Base Plate., Vented Mast Arm Cap With (3) Stainless Steel Set Screws, Pole, Handhole (See Sheet 6), Base Plate Connection (See Sheet 2), Top of Finished Grade, Bottom Of Plate, Signal Conduit (For No. & Size See Signal Plans), Foundation (Drilled Shaft) (See Sheet 2).
 - Material Specifications:** Split-lock washers and self-locking nuts are not permitted. A. Poles, Mast Arms and Backing Rings: a. Less than 3/16": ASTM A1011 Grade 50, 55, 60 or 65; b. Greater than or equal to 3/16": ASTM A572 Grade 50, 55, 60 or 65; c. ASTM A595 Grade A (55 ksi yield) or Grade B (60 ksi yield). B. Steel Plates: ASTM A36. C. Weld Metal: E70XX. D. Bolts, Nuts and Washers: a. High Strength Bolts: ASTM F3125, Grade A325, Type 1; b. Nuts: ASTM A563 DH Heavy-Hex; c. Washers: ASTM F436 Type 1, one under turned element. E. Anchor Bolts, Nuts and Washers: a. Anchor Bolts: ASTM F1554 Grade 55; b. Nuts: ASTM A563 Grade A Heavy-Hex (5 per anchor bolt); c. Plate Washers: ASTM A36 (2 per bolt). F. Threaded Bars/Studs: ASTM A36 or ASTM A307. G. Handhole Frame: ASTM A709 or ASTM A36, Grade 36. H. Handhole Cover: ASTM A1011 Grade 50, 55, 60 or 65. I. Aluminum Pole Caps and Nut Covers: ASTM B26 (319-F). J. Stainless Steel Screws: AISI Type 316. K. Concrete: Class IV (Drilled Shaft) for all environmental classifications. L. Reinforcing Steel: Specification Section 415.
 - Fabrication:** A. Pole and Mast Arm Taper: Change diameter at a rate of 0.14 inches per foot. B. Upright splices are not allowed. Transverse welds are only permitted at the base. C. First and Second arm camber angle = 2°. D. Provide bolt diameters as follows: a. Bolts (except Anchor Bolts): Bolt diameter plus 1/16", prior to galvanizing. b. Anchor Bolts: Bolt diameter plus 1/2" (Max.). E. Face handhole perpendicular from arm on single arm poles, perpendicular from first arm of double arm poles facing away from traffic or see special instructions on the Mast Arm Tabulation Sheet. F. Seam weld on bottom side of arm. Seam weld under Arm 1 side of pole. G. Provide a 'J' or 'C' hook at the top of the pole for signal wiring support (See Sheet 6). H. Perform all welding in accordance with Specification Section 460-6.4. I. Hot Dip Galvanize after fabrication.
 - Coatings:** A. All Nuts, Bolts, Washers and Threaded Bars/Studs: ASTM F2329. B. All other steel items ASTM A123.
 - Construction:** A. Foundation: Specification Section 455 Drilled Shaft, except that payment is included in the cost of the Mast Arm. B. Install Pole vertically. C. Place structural grout pad with drain between top of foundation and bottom of baseplate in accordance with Specification Section 649-7. D. Attach Sign Panels and Signals centered on the elevation of the Mast Arm. E. Wire Access holes are 1 1/2" or less in diameter.

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2	Foundation and Base Plate Details
3	Single Arm Connection and Splice Details
4	Double Arm Connection and Splice Details
5	Luminaire Arm and Connection Details
6	Handhole and Pole Top Details

Single Arm Shown, Double Arm Similar
(Luminaire Arm Not Shown)

MAST ARM ASSEMBLY

ELEVATION AND NOTES

LAST REVISION
11/01/17

REVISION

DESCRIPTION:

FDOT

FY 2018-19
STANDARD PLANS

MAST ARM ASSEMBLIES

INDEX
649-031

SHEET
1 of 6